AMD
Smarter Choice

AMD FireStream Stream Processors and FireStream SDK

November 2007

Agenda

- AMD & Stream Computing
- Introducing the AMD FireStream 9170
- AMD FireStream Software Development Tools

General Purpose GPU:
Platform Processing Acceleration

AMD Smarter Choice

Huge potential for acceleration of data parallel workloads

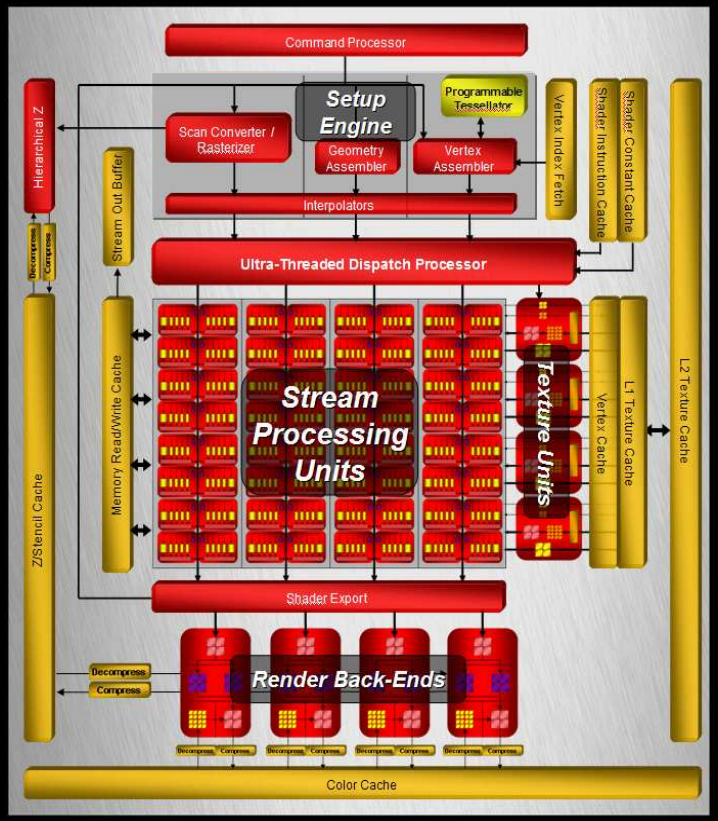
- Using the parallel processing capabilities of the GPU for computation

Highly efficient in handling massive amounts of data processing

- Supports 1000's of concurrent threads

Where the algorithm is well-suited to the architecture, dramatic improvements in several key metrics vs. current CPUs alone

- GFLOPS per Watt and per $



AMD Stream Computing:
HPC Acceleration + Mainstream Efficiency Gains

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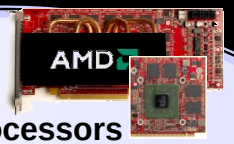
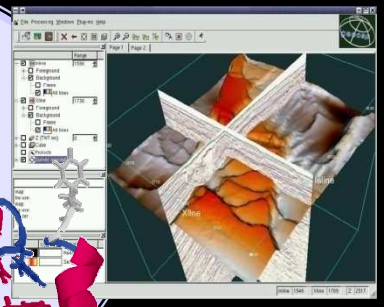
Stream Computing

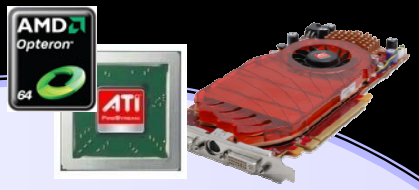
Discrete Stream Processor Business

Products
FireStream Processors





Markets
- Oil and Gas
- Research
- Engineering



Products
- AMD processors and GPUs for PCs and workstations

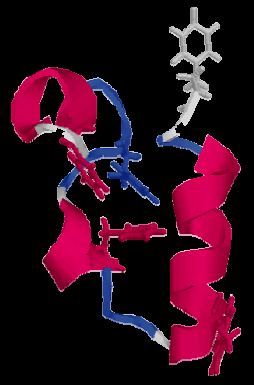
Acceleration for Mainstream Applications

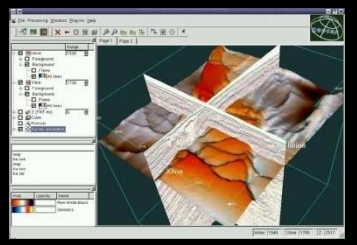
Markets
- Gaming
- Search
- Consumer Video

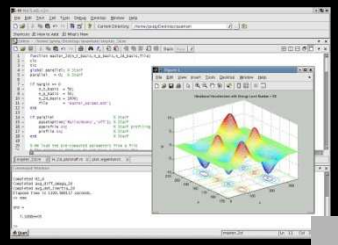
Stream Computing Market Opportunity

AMD Smarter Choice

- Accelerate critical computational algorithms
  - HPC: Computational chemistry, seismic processing, atmospheric research, engineering, financial analysis
  - Embedded OEM: Signal processing, medical imaging
  - Commercial/consumer: Search, security, video editing, video games







New Stream Computing Products

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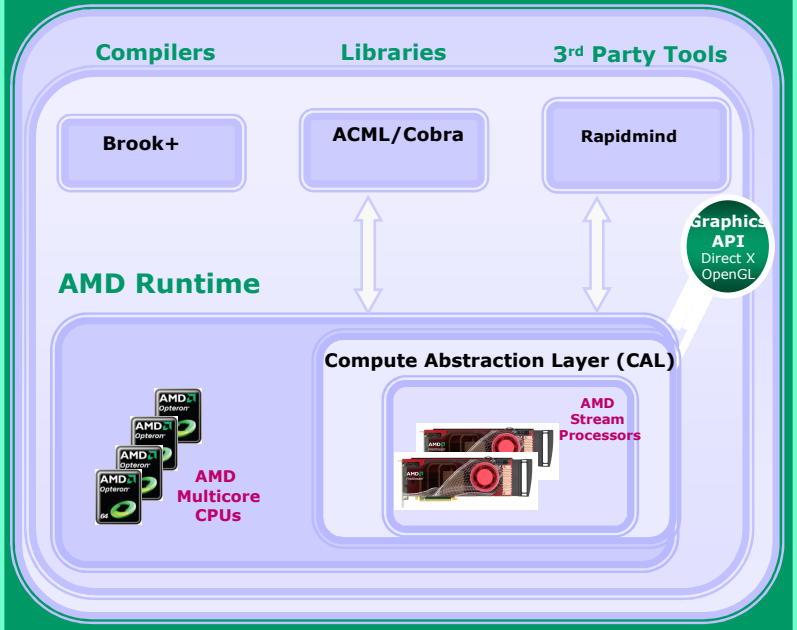
AMD FireStream 9170 Stream Processor

First Stream processor with double-precision floating point

AMD FireStream SDK

Open systems approach to drive broad customer adoption



AMD FireStream 9170 Stream Processor

Designed for Performance and Efficiency

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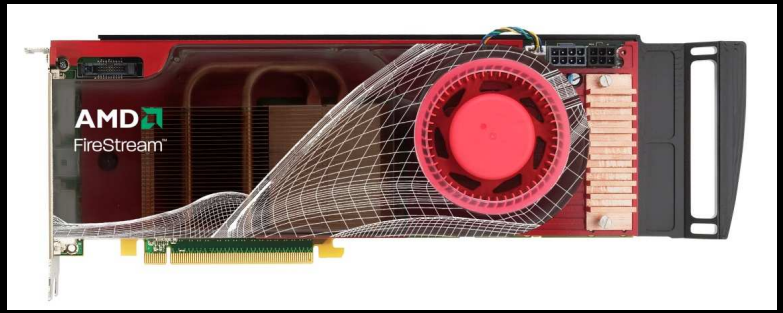
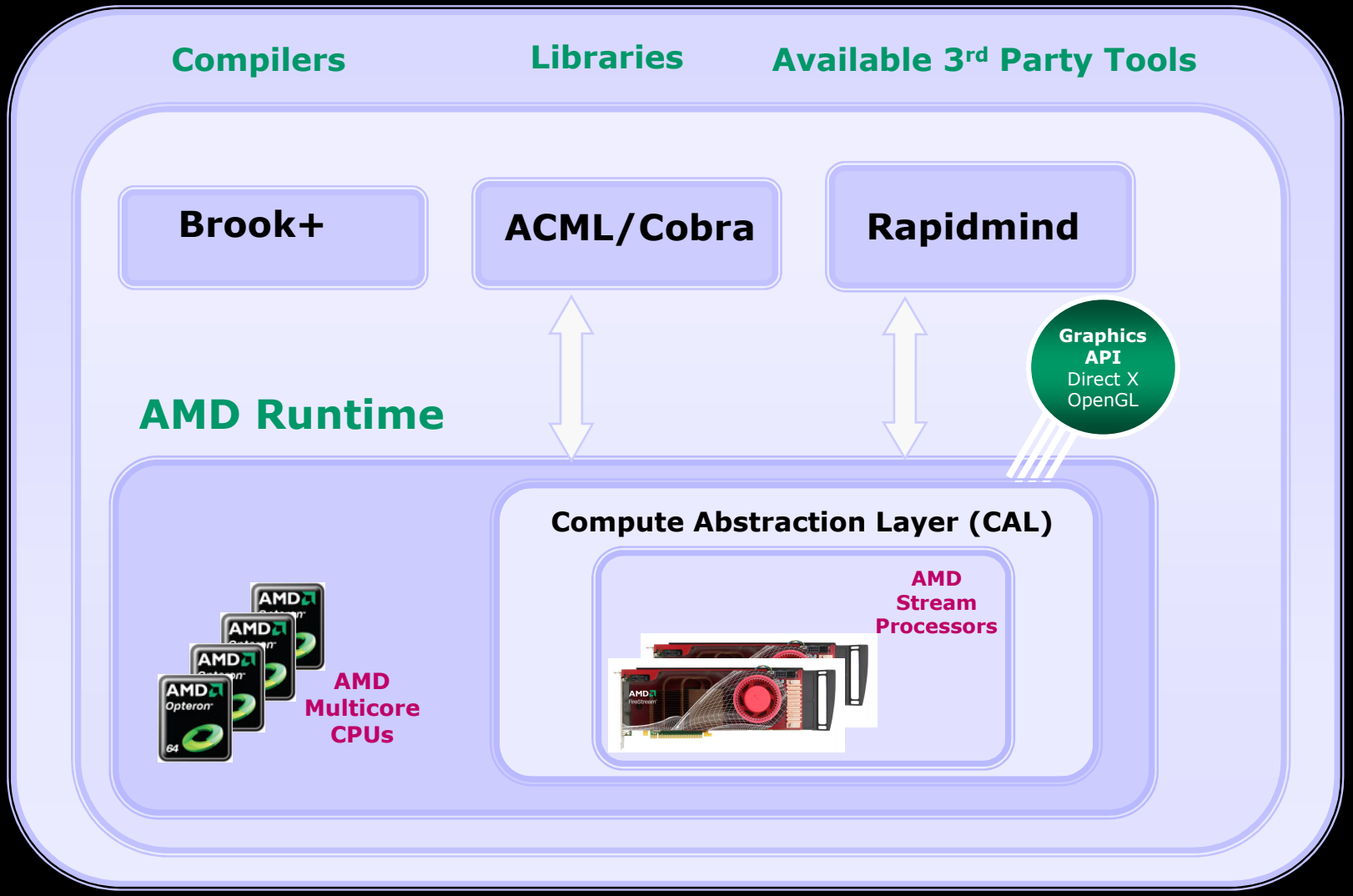
- First GPU with double-precision floating point
- 320 stream cores
- Up to 512 GFLOPS single-precision performance*
- 55nm process technology
- <150W power consumption drives over 3 GFLOPS/Watt!
- 2GB on-board memory
- Asynchronous DMA
- Supported in variety of server and desktop systems
- **MSRP:** $1999



***Based on 320 stream cores and engine clock rates of 775-800MHz**

FireStream SDK
Software Development Stack



Compute Abstraction Layer
The Evolution of "Close to the Metal"

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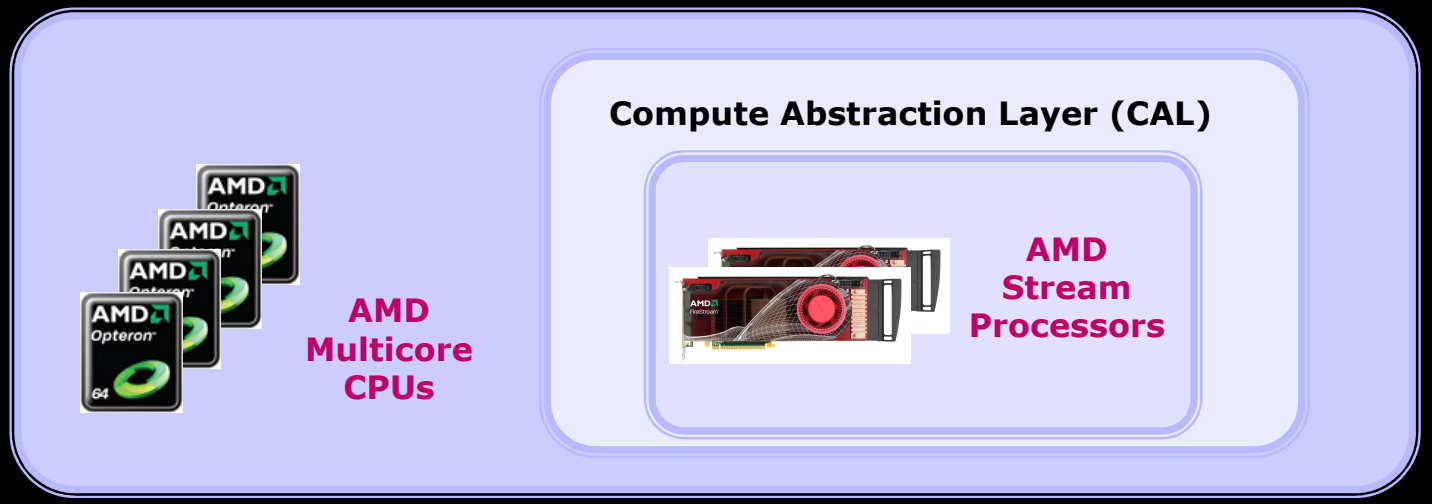
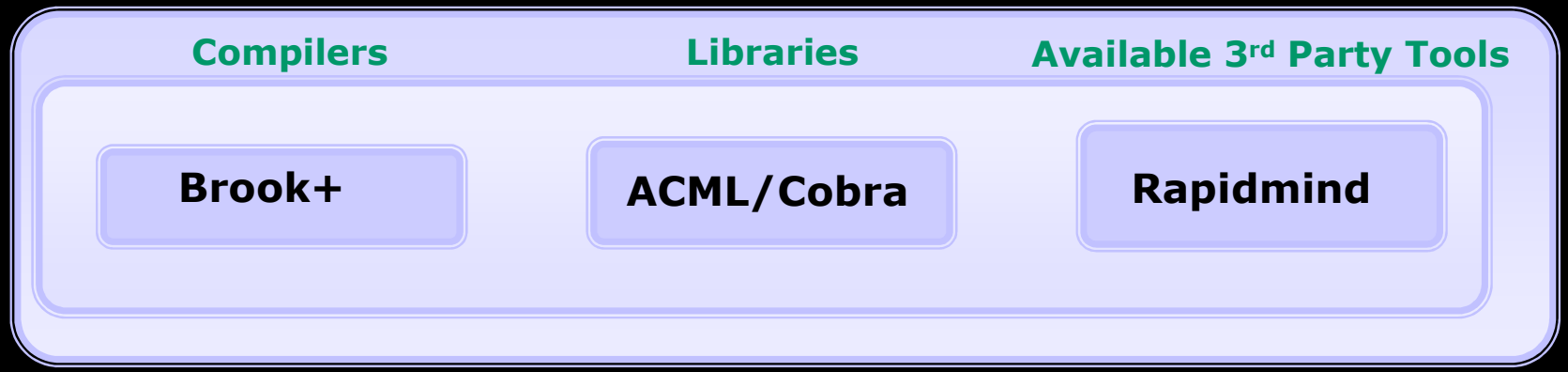
- Provides low-level access to GPU architecture
- Published instruction set architecture (ISA) and intermediate language (IL)
  - Allow developers to write in Brook+ or other HLL; then tune performance at low level
- Forward compatibility from R600 to future GPUs
- Implements new features: DX10, DP-FP



FireStream Software Development Kit

High-level Development Tools

- Brook+
  - High-level language, C extensions for the GPU
  - Based on Brook from Stanford; AMD enhancements will be open-sourced
- Libraries
  - AMD's math library ACML provides GPU-accelerated math functions; COBRA video library accelerates video transcode
- 3rd Party Tools
  - Tools and libraries from RapidMind, etc



Open Systems Strategy Drives Adoption

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- Open IL and ISA specifications ensure developers can optimize performance
- Supporting AMD Brook+ along with other 3rd party high-level tools to provide a choice of familiar development environments
- Open-source Linux drivers and AMD-enhanced Brook+ enable developers to modify and retarget tools as needed
- AMD partners with systems vendors and integrators to deliver system solutions

AMD Stream Computing: In Summary

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- AMD FireStream 9170 Stream Processor: first GP-GPU with double-precision floating point
- AMD FireStream SDK: Open systems approach drives broad adoption
- AMD expertise in GPUs, CPUs and software: capable of delivering integrated hardware and tools today
- Provides a path to next-generation heterogeneous compute architectures in the data center